

CLAIMS

1. A method for manufacturing an emulsifier package comprising:  
blending a flow of fuel soluble product, a flow of stabilizer, and a flow of water in a mixing vessel to form a mixture;  
mixing said mixture in said mixing vessel;  
recirculating said mixture through said mixing vessel; and  
shearing said mixture with a shearing device at a rate of about 27,500 shears per second to about 87,500 shears per second.
2. The method of Claim 1, wherein said shearing device is selected from the group consisting of a high speed mixer, mechanical mixer agitation, static mixers, shear mixers, sonic mixers, and high pressure homogenizers.
3. The method of Claim 1, wherein said water is selected from the group consisting of ammonium based water, tap water, deionized water, demineralized water, and purified water.
4. The method of Claim 1, wherein said fuel soluble product is a derivative of a fatty acid.

5. The method of Claim 4, wherein said fatty acid is selected from the group consisting of myristic acid, palmitic acid, stearic acid, oleic acid, linoleic acids, linolenic acid, and combinations thereof.

6. The method of Claim 1, wherein said stabilizer is selected from the group consisting of polyisobutylene and poly isobutylene succinate anhydride compounds.

7. An emulsifier package manufactured by the method of Claim 1.

8. A method for manufacturing an aqueous fuel emulsion comprising:  
blending a flow of a liquid hydrocarbon fuel with a flow of an emulsifier package and a flow of water to form a first mixture, said emulsifier package manufactured by a method comprising:

blending a flow of a fuel soluble product, a flow of a stabilizer, and a flow of a first water in a mixing vessel to form an emulsifier mixture;

mixing said emulsifier mixture in said mixing vessel; and

recirculating said emulsifier mixture through said mixing vessel; and

shearing said emulsifier mixture with a shearing device at a rate of about 27,500 shears per second to about 87,500 shears per second;  
directing said first mixture into a mixing vessel; and  
mixing said first mixture to form the aqueous fuel emulsion.

9. The method of Claim 8, wherein said mixing vessel is equipped with a mixing device.

10. The method of Claim 9, wherein said mixing device is selected from the group consisting of a high speed mixer, mechanical mixer agitation, static mixers, shear mixers, sonic mixers, and high pressure homogenizers.

11. The method of Claim 8, wherein said first water is selected from the group consisting of ammonium based water, tap water, deionized water, demineralized water, and purified water.

12. The method of Claim 8, wherein said fuel soluble product is a derivative of a fatty acid.

13. The method of Claim 12, wherein said fatty acid is selected from the group consisting of myristic acid, palmitic acid, stearic acid, oleic acid, linoleic acids, linolenic acid, and combinations thereof.

14. The method of Claim 8, wherein said stabilizer is selected from the group consisting of polyisobutylene and a poly isobutylene succinate compound.

15. The method of Claim 8, wherein said fuel is a hydrocarbonaceous petroleum distillate fuel.

16. The method of Claim 15, wherein said hydrocarbonaceous petroleum distillate fuel is selected from the group consisting of motor gasoline, diesel fuel, fuel oil, kerosene, naptha, aliphatics, and paraffinics.

17. The method of Claim 8, wherein said fuel is a non-hydrocarbonaceous fuel.

18. The method of Claim 17, wherein said non-hydrocarbonaceous fuel is selected from the group consisting of methanol, ethanol, diethyl ether, methyl ethyl ether, organo-nitro compounds, and liquid fuels derived from vegetable or mineral sources such as corn, alfalfa, shale, coal.

19. The method of Claim 8, wherein said second water is selected from the group consisting of tap water, deionized water, demineralized water, and purified water.

20. The method of Claim 8, wherein said second mixture further comprises compounds selected from the group consisting of dispersants, corrosion inhibitors, antioxidants, anti-rust agents, detergents, and lubricity agents.

21. An emulsified fuel manufactured by the method of Claim 8.